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IN THE UNITED STATES PATENT AND TRADEMARK OFFICE

Applicant : SCHLECHT et al.
Serial No : 10/840,213
Filed : May 5, 2004
For : HEATING SYSTEM FOR...
Art Unit : 3749
Examiner : BOLES, Derek
Dated : April 25, 2006

Commissioner for Patents
P.O. Box 1450
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REQUEST FOR RECONSIDERATION AFTER FINAL REJECTION

In view of the rejection of all claims in the Final Action of February 23, 2006, Applicant hereby requests reconsideration of the rejection in consideration of the following comments as to the newly cited prior art.

Claims 1 - 5, 7, 9 and 11 have been rejected as being anticipated by Kagohata (U.S. Patent 4,829,884).

The Kagohata reference discloses a blower 1, a heater 3 and a plurality of temperature sensors 21, 22 and 23. However, the heater 3 shown in Kagohata (as well as the heater 34 shown in the prior art document Aislabie et al. - U.S. Patent 5,983,649) is not a heater wherein the heat output of the heater can be set or changed. Particularly, the heater cannot be set based on the sensor output of the heating air stream temperature sensor arrangement. Specifically, the heater 3 of Kagohata is part of a heat exchanger in which the engine coolant is used for

transferring heat generated in the internal combustion engine to the air which is to be delivered to the vehicle interior. In this regard, these heaters are not under the control of a control arrangement for obtaining a predetermined temperature of the heating air. The heat output cannot be set. As the heater 3 is a simple heat exchanger with heat supplied by the coolant of the engine, the heater 3 is not operated for a particular heat output. Kagohata fails to teach and fails to suggest an interaction between the control system which receives temperature sensor output information and the output of the heater, wherein the heater is adjusted as to its heat output or heat capacity. The prior art does not teach or suggest such a change in heating capacity or heat output with adjusting of the temperature of the air discharge from the heater.

An essential feature of the invention as claimed in each of independent claims 1, 3 and 5 is that the heat output of the heater itself is adjusted by the control arrangement on the basis of the temperature of the heating air stream detected by the heating air stream temperature sensor arrangement. According to the invention it is possible to adjust the temperature of the air discharge from the heater to a predetermined value, for example a fixed predetermined value independent of the ambient air conditions. With the system of the invention a predetermined condition of the heating air stream discharged by the heater can be assured. Further, this occurs without a complex control strategy as required in the prior art. As specified in each of independent claims 1, 3 and 5 by adjusting the outside air/ambient air ratio and on the basis of the respective temperature values, the vehicle interior can be heated by the desired value while also assuring that there is the maximum amount of fresh air contained in the airstream.

The prior art as a whole including Kagohata and the secondary reference Aislabie et al.

(discussed further below) fail to teach and fail to suggest the combination of features claimed. With Kagohata there is a clear teaching to the person of ordinary skill in the art (see column 4, lines 45 - 51) that the temperature signals of the respective sensors are used in the control system for controlling the opening positions of the respective mixing doors. As one can appreciate from Kagohata, the system then requires a rather complicated control for mixing different airstreams so as to obtain the desired temperature. Although a complicated control system is provided, the control system is not intended and is not used to control the heating behavior of the heater 3. Instead, the desired air temperature is provided by mixing different airstreams without having the necessity of additionally controlling the heater. As one of ordinary skill in the art appreciates, the heat output of the heater depends on the operation state of the internal combustion engine and the temperature of the coolant which flows into the heater 3 for heat transfer. There is no teaching and no suggestion in Kagohata to change the heat output of the heater (namely regulate or control the internal combustion engine to vary the heat output).

As can be appreciated from the disclosure of the present application, the present application provides an arrangement wherein the heat output of the heater is set on the basis of the output of the heating airstream temperature sensor arrangement. According to the preferred embodiment, a burner is provided for the purpose of providing heat, wherein the output of the heater can be regulated based on how the heater is operated, namely how the heating burner is supplied with fuel and combustion air. Although it is believed that the claims are clear, and properly highlight the ability to set the heat output, a feature which is not present in the prior

art, it is noted that Applicant could provide more particulars as to the preferred embodiment, namely the feature that the heater comprises a heating burner supplied with fuel and combustion air for burning a fuel-air mixture and generating heat, namely providing a heat output which can be set. These features of the preferred embodiment could be additionally highlighted in claims. However, the crux of the difference is already specified in the feature that the heater has a heat output that can be set or adjusted on the basis of the output of the heating airstream temperature sensor arrangement. As can be appreciated, the prior art does not provide this. The prior art instead has a given heat output with this given heat output being based on the operation of the internal combustion engine. Based on this given heat output, other adjustments or settings are provided as noted above. Accordingly, Applicant's claimed invention provides a combination of features which are neither taught nor suggested by the prior art. The prior art clearly does not suggest or direct the person of ordinary skill in the art toward the combination.

Claims 6, 8 and 10 have been rejected the teachings of Kagohata in view of Aislabie et al. As indicated above, Kagohata and Aislabie et al. Fail to provide any teachings or suggestions which would direct the person of ordinary skill in the art away from providing a constant output heater. Instead, each reference directs the skilled artisan to an engine dependant heat output. With Aislabie et al. the reference is silent as to the control method which is used. Clearly the reference discloses the use of a heater 34 which provides a constant heat output, namely provides a heat output based on the internal combustion engine operation. Further, it is not clear to Applicant that the reference provides a teaching or suggestion of the features for which it is cited (the features of claims 6, 8 and 10 do not appear to be suggested or taught).

The system as defined in independent claims 1, 3 and 5 involves a heater which can be controlled as to its heat output. This aspect is important in combination with the other features claimed. As the prior art as a whole fails to teach and fails to suggest the combination, Applicant respectfully requests that the Examiner favorably consider the claims as presented.

Respectfully submitted
For Applicant,



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